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REVIEW OF THE GENUS *ENTEDON* (HYMENOPTERA, EULOPHIDAE, ENTEDONINAE) 2. REVISION OF THE *CRASSISCAPUS* SPECIES-GROUP

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Review of the Genus *Entedon* (Hymenoptera, Eulophidae, *Entedon*inae) 2. Revision of the *crassiscapus* Species-group. Gumovsky A. V. — Species of the *crassiscapus* species group of the subgenus *Entedon* in genus *Entedon* are revised. The group includes 2 species: a widespread Palaearctic *E.* (*E.*) *crassiscapus* Erdös and *E.* (*E.*) *albifemur* Kamijo from Japan, Korea and Far East Russia. Diagnoses, characters used for taxonomic purposes, intraspecific variation, main plesio- and apomorphies, and a position of studied species group in the genus *Entedon* are discussed and evaluated.

Key words: Hymenoptera, Eulophidae, Entedoninae, *Entedon*, Ukraine, Far East Russia, Korea, Japan.

Обзор рода *Entedon* (Hymenoptera, Eulophidae, Entedoninae). 2. Ревизия группы видов *crassiscapus*. Гумовский А. В. — В статье проведена ревизия видов группы *crassiscapus* подрода *Entedon* рода *Entedon*. Группа включает распространенный палеарктический *E.* (*E.*) *crassiscapus* Erdös и *E.* (*E.*) *albifemur* Kamijo, который распространен в Японии, Корее и на Дальнем Востоке России. Приведен полный диагноз исследованной группы видов, таксономические признаки и новые данные по распространению входящих в нее видов, обсуждены особенности внутривидовой изменчивости, присущие группе плезио- и апоморфии, а также ее место в системе рода *Entedon*.

Ключевые слова: Hymenoptera, Eulophidae, Entedoninae, *Entedon*, Украина, Дальний Восток России, Корея, Япония.

Introduction

This paper continues comparative study of the genus *Entedon* Dalman (Hymenoptera, Eulophidae, Entedoninae). In previous paper (Gumovsky, 1997) division of the genus to subgenera *Entedon* (cosmopolitan) and *Cederholmia* (known only from Africa) was proposed. Subgenus *Entedon* was taken to consist of eight species groups: *squamosus*, *cioni*, *hercyna*, *crassiscapus*, *costalis*, *sparetus*, *crassiscapus* and *kerteszi* (Gumovsky, 1997).

Entedon crassiscapus Erdös was proposed by Erdös to be placed in the subgenus *Trochentedon* of the *Entedon* (Erdös, 1944). In the same paper he described *E. flavicrus* Erdös in the subgenus *Dolichentedon*. *E. crassiscapus* and *E. flavicrus* were synonymized by Erdös (1951). Then Graham (1963, 1971) proposed species group division instead of the division into subgenera proposed by Erdös (loc. cit.) and placed *Entedon crassiscapus* Erdös into *cioni* species group. Kamijo (1988) described *Entedon albifemur* as similar to *E. crassiscapus* Erdös. Askew (1992) reviewed species with the complete frontal fork, and separated *Entedon crassiscapus* and *E. albifemur* from the members of re-defined *cioni* species-group.

Gumovsky (1997) placed *E. crassiscapus* and *E. albifemur* in separate species-group *crassiscapus* and proposed its short diagnosis. Expanded diagnosis of the group is given below.

Species-group *crassiscapus*

Description. Both sexes: funicle 3-segmented, frontal fork present, venation of fore wing thin and light or pale, occipital margin with thin carina; clypeus truncate; propodeum densely reticulated in middle part, median carina often disappearing among coarse alveoli of reticulation or indicated just as smooth stripe or weak furrow (somewhat like in African genus *Colpixys* Waterston); spiracular elevations of

propodeum sphaerical, with short sharp terminal spines, delimited just at outer margin and apically; petiole well-developed, robust, but transverse; fore tibia with two or sometimes one dark dorsal stripes; trochanters hyaline; speculum closed; tibiae completely white, colouration of femora varies from broadly darkened in proximal part to completely white.

Male: similar to female, but occipital carina more distinct; gaster without basal light-coloured spot.

This species-group includes the widespread Palaearctic *Entedon* (*Entedon*) *crassiscapus* Erdös and *E.* (*E.*) *albifemur* Kamijo from Japan and Far East Russia.

Discussion. Askew (1992) separated *E. crassiscapus* and *E. albifemur* from the members of the *cioni* species group basing on relatively short funiculars (at most 1.2 times as long as pedicel) and male with three-segmented funicle and one-segmented clava. However, these characters are variable within other species groups: *squamosus*, *cyanellus* and *hercyna* species groups include species with both four- and three-segmented male funicles, and length of the first funicular segment varies from as long as up to 6 times longer than the pedicel. As defined here, the *crassiscapus* species group differs from the nearest *cioni* species group in having hyaline trochanters and short, but developed petiole, densely reticulated median area of propodeum.

Our study demonstrated *E.* (*E.*) *crassiscapus* to be very variable in gastral length and length of 1st funicular. European specimens have subcircular or even transverse (about 1.2 times as broad as long) gaster. Although most specimens of *E.* (*E.*) *crassiscapus* reared from *Artemisia rubripes* in Far East Russia have the gaster slightly longer than wide (about 1.06 times longer than wide), and three swept ones have even longer gaster (1.86, 1.66, and 1.38 times as long as wide, respectively, Fig. 1, *5*). Despite distinct difference between mentioned above extremums, there is no clear hiatus among types of gastral shape, which are regarded herein as samples of intraspecific variation.

Kamijo (1988) recorded *E.* (*E.*) *albifemur* (Fig. 6 in Gumovsky, 1997) as differing from *E.* (*E.*) *crassiscapus* in having distance from the hind ocellus to the occipital margin 1/2 as long as the ocellar major diameter, slender pedicel, that is twice longer than broad and the 3rd funicular longer than broad. Our material demonstrates, that the characters of *E.* (*E.*) *albifemur* mentioned above fit several European specimens of *E.* (*E.*) *crassiscapus* and most specimens of this species from Far East Russia. Other differences between these two species concern colouration: antennal scape wholly and all femora in proximal 1/2—2/3 of its length dark in *E.* (*E.*) *crassiscapus*, while in *E.* (*E.*) *albifemur* all femora and basal scape light. These characters seem to be quite constant, although one female of *E.* (*E.*) *albifemur* from Far East Russia (Anisimovka) has hind femora with small greenish-brown basal spot.

The group includes two species differing as shown in Table 1.

Monophyly of the *crassiscapus* species group is supported by the presence of such apomorphies as densely reticulated median propodeum and reduced lateral propodeal sulcus. It possesses several significant plesiomorphies: complete Y-shaped frontal fork, hyaline trochanters, sphaerical spiracular elevations with sharp terminal spines, and therefore is to be considered as one of the most primitive groups in the nominotypical subgenus of the genus *Entedon*. The combination of these plesio- and apomorphies explains an isolated position of the *crassiscapus* species group in the subgenus *Entedon*.

Table 1. Differencies between *E.* (*E.*) *crassiscapus* and *E.* (*E.*) *albifemur*.

Таблица 1. Отличительные признаки *E.* (*E.*) *crassiscapus* и *E.* (*E.*) *albifemur*

Character	*E.* (*E.*) *crassiscapus*	*E.* (*E.*) *albifemur*
Scape colouration	completely darkened	slightly white basally
Femora colouration	darkened at least in proximal half	wholly white, rarely hind femora with weak basal spot

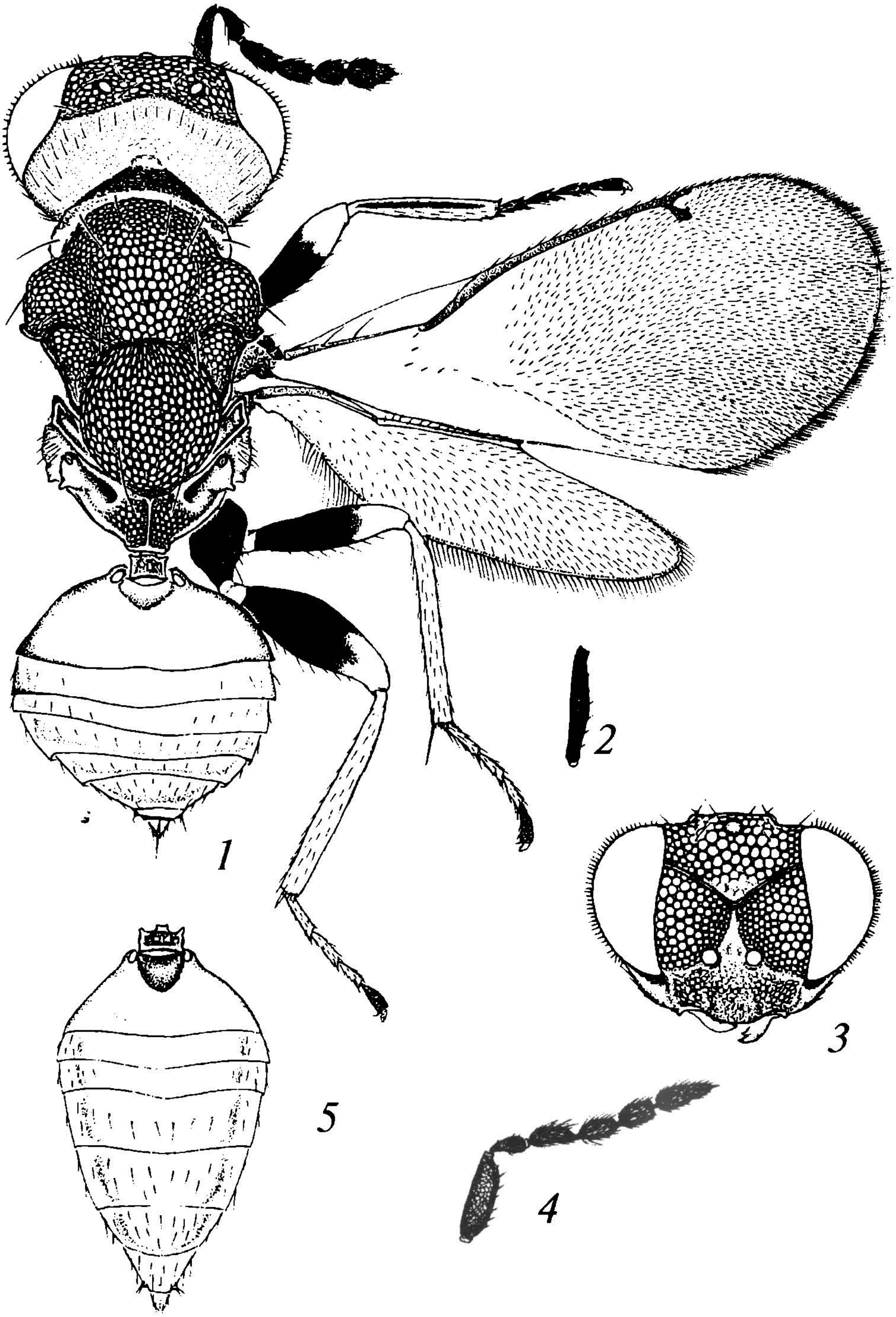


Fig. 1. *Entedon (Entedon) crassiscapus*: *1* – female habitus (holotype); *2* – female scape (holotype); *3* – female head in frontal view (holotype); *4* – male antenna (allotype); *5* – variation of shape of female gaster (specimen from Far East Russia).

Рис 1. *Entedon* (*Entedon*) *crassiscapus*: *1* – габитус самки (голотип); *2* – скапус самки (голотип); *3* – голова самки вид спереди (голотип); *4* – усик самца (аллотип); *5* – вариация формы брюшка самки (экземпляр с Дальнего Востока Росии).

Entedon (Entedon) crassiscapus Erdös, 1944

Entedon crassiscapus Erdös, 1944: 61; – *flavicrus* Erdös, 1944: 38; Erdös, 1951: 227; Graham, 1971: 356; Gumovsky, 1997: 33.

Type material. Holotype *Entedon crassiscapus* Erdus: ♀ "Rév. 1943.VII.28. Erdös leg. № 5502"; allotype *Entedon crassiscapus* Erdös, ♂ "Kalocsa. 1947.VI.15. *Mordellistena parvula* Gyl. in caule *Artemisia vulgaris* L. Erdös leg. № 5674" (without standard label of TMB); lectotype *Entedon flavicrus* Erdös, ♀ "Ósebeshely. 26.VI.1913. Biry leg. № 4881", selected by M. W. R. de V. Graham, designated by Thuróczy (1992), paralectotypes: ♀ "Budapest, Hüvösvölgy. 1908.VI.17. № 4882"; ♀ "Tasnád. 12.VII.1917. № 4883" (TMB).

Material. Ukraine, Kiev: Golosieve, ex *Mordellistena falsoparvula* Gyll. in caule *Artemisia* sp., 7.V.1984, 8 ♀, 4 ♂ (Odnosum); Pirogovo, 30.VI.1997. ♀ (Gumovsky); Trukhaniv Is. N part, ex mordellid beetles in caule *Artemisia* sp., 7.IV.1997, ♀, ♂ (Gumovsky); Hungary, Farkasfд, 30.VI.1994, ♀ (Fursov); Far East Russia, Primorskiy krai: Spassk vicinity, swept in crowns of *Acer*, *Pinus*, *Quercus*, *Chosenia*, 23.VII.1977, 2 ♀ (Storozheva); 20 km S Spassk, Evseevka vicinity, broad-leaved forest, 4 ♀ (Storozheva); "Kedrovaya Pad'" natural reserve, Sidin river valley, 26.VI.1976, 2 ♀ (Storozheva); Vladivostok vicinity, ex caule *Artemisia rubripes*, 12.IV.1983, 14 ♀, 3 ♂ (Zerova) (SIZK); "Sedanka, net-sweeping", 3.VIII.961, ♀ (Nikolskaya); Suchan river valley, down of Suchan, 11–12.VII.1961, ♀ (Shuvakhina); Vladivostok [Akademgorodok], 8.VIII.961, 5 ♀ (M. Kozlov), ibid., 21.VII.961, 2 ♀ (Nikolskaya) (ZISP); Japan, Kyushu, Gokanosho, Izumi, Kumamoto, 10.VIII.1983, ♀ (Ikeda) (EI); Korea, Tesson, 35 km SW Pyongyan, water-basin, "№ 343 — netting in grasses", 4.VII.1977, ♀, ♂ (Dely & Draskovits) (TMB).

Biology. *Mordellistena parvula* Gyll. (Erdös, 1951), *M. weisei* Schilsky (Bouček & Askew, 1968), *Mordellistena falsoparvula* Gyll. (herein) in stems of *Artemisia vulgare* recorded as hosts for the species, *Artemisia rubripes* recorded as host plant for the first time.

Distribution. Western and Central Europe (Bouček & Askew, 1968, here), Ukraine, Far East Russia, Japan, Korea (new records).

Entedon (Entedon) albifemur Kamijo, 1988

Entedon albifemur Kamijo, 1988: 334; Gumovsky, 1997: 33.

Type material. Paratype ♀, Teine. Hokkaido. 29.VII.1956. K.Kamijo. "2" (KK).

Material. Specimens with femora wholly white: Japan, Kyushu, Gokanosho, Izumi, Kumamoto, 10.VIII.1983, ♀ (Ikeda) (EI); Far East Russia, Primorskiy krai: Terekhovka, "locality № 43", ex mordellid beetle in caule *Artemisia rubripes*, collected 21.IV.1983, reared 30.VI.1983, ♀ (Zerova); "Kedrovaya pad" nature reserve, Kedrovaya river bank, 8.VIII.1976, ♀ (Storozheva); Vladivostok vicinity: ex mordellid beetle in caule *Artemisia rubripes*, 12.IV.1983, ♀ (Zerova)(SZK); Vladivostok vicinity, Okeanskaya, 7.VII.961, 2 ♀ (Kozlov); specimens with weak basal infumation on hind femur: Far East Russia, Primorskiy krai: Anisimovka, meadow in *Phellodendron amurense* vegetation, ♀ (Storozheva); Ugolnaya Station, 9.VII.961, ♂ (Tryapitsin) (ZISP).

Biology. Association with *Betula platyphilla* (Kamijo, 1988) seems to be doubtful. Our materials demonstrate parasitization of the species in mordellids in stems of *Artemisia rubripes*, the same host plant genus as for *E. crassiscapus*.

Distribution: Japan (Kamijo, 1988), Far East Russia (new record).

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КРАСНАЯ КНИГА УКРАИНЫ

Находка аптечной медицинской пиявки *Hirudo medicinalis* f. *officinalis* в Украине. [A Finding of the Officinal Medicinal Leech *Hirudo medicinalis* f. *officinalis* in Ukraine]. — В зависимости от особенностей окраски различают три формы медицинской пиявки (Лукин, 1978): аптечная, распространенная в Молдове, Краснодарском крае (Россия) и в Армении; лечебная, встречающаяся преимущественно в водоемах Украины, а также обнаруженная в Литве (Запкувене, 1972); персидская, распространенная в Закавказье и Иране. Е. И. Лукин (1976) отмечал, что в Украине кроме лечебной медицинской пиявки *Hirudo medicinalis* f. *serpentina* обитает еще другая форма. До сих пор оставалось неизвестным, какая это форма. 15 октября 1996 г. в небольшом водоеме на территории урочища "Горелая долина" (Змиевской р-н, Харьковская обл.) О. С. Горбулин (кафедра ботаники, Харьковский ун-т) обнаружил медицинскую пиявку, которая была определена нами как аптечная — *Hirudo medicinalis* f. *officinalis*. Пиявка имела характерные для этой формы признаки: на спинной стороне тела хорошо развитые оранжевые полосы с перетяжками, брюшная сторона без темных пятен, с двумя широкими боковыми черными полосами. Таким образом, на территории Украины встречаются две формы медицинской пиявки: лечебная *H. medicinalis* f. *serpentina* и более редкая аптечная *H. medicinalis* f. *officinalis*. Авторы выражают глубокую благодарность О. С. Горбулину за предоставление ценного материала. — **С. Ю. Утевский, А. Ю. Утевский, О. М.** Утевская (Харьковский университет).